

Date: Wednesday, 3/21/2007 3:48:28 PM  
 User: Kim Johnston

## Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: WEARPAD
Job Number	: 31417		
Estimate Number	: 12781		
P.O. Number	: <u>NA</u>	Part Number	: D35641
This Issue	: 3/21/2007	S.O. No.	: <u>N/A</u>
Prsht Rev.	: NC	Drawing Number	: D3564 REV A
First Issue	: <u>NA</u>	Project Number	: N/A
Previous Run	: 31132	Drawing Revision	: A
		Material	: <u>NA</u>
		Due Date	: 3/30/2007
Written By	: _____	Qty:	10 Um: Each
Checked & Approved By	: <u>07.03.22</u>		
Comment	: Est Rev: A New Issue 07-03-08 ec		

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description:
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1.0	M304S16GA	304/316 .063 Sheet
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Comment: Qty.: 0.9177 sf(s)/Unit Total: 9.1770 sf(s)  
 M304S16GA Stainless steel sheet 0.063" thick  
 Batch: M101873

SAN 07/03/24 (10)

2.0	WATER JET	FLOW WATER JET
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Comment: FLOW WATER JET  
 1-Cut as per Dwg D3564 \*\*\*\*\* (D3564-1F) \*\*\*\*\*  
 Dwg Rev: A  
 Prog Rev: A  
 2-Deburr if necessary

SAN 07/03/24 (10)

3.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE
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Comment: INSPECT PARTS AS THEY COME OFF MACHINE

SAN 07/03/24 (10)

4.0	QC8	SECOND CHECK
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Comment: SECOND CHECK

SN 07/03/24

5.0	BRAKE NC	NC BRAKE
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Comment: NC BRAKE  
 Deburr if necessary  
 Form on Brake as per Dwg D3564 using Jigs DT and DT  
 Form Joggles (2) as per Dwg D3564 on brake using Jig DT

MR 07-03-30 (10)  
SB 07/04/02

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: /

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Wednesday, 3/21/2007 3:48:28 PM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: WEARPAD

Job Number: 31417

Part Number: D35641

Job Number:



Seq. #:

Machine Or Operation:

Description:

6.0

QC5

INSPECT WORK TO CURRENT STEP



207-04-02



Comment: INSPECT WORK TO CURRENT STEP  
Ensure joggle as per dwg D3429

7.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

Qty

Description

Batch

A/R 2059B Hardcoat

m102755

FC 07/04/09

(10)

Weld hardcoat as per Dwg D3437

8.0

QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

07/04/13 (10)

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

07/04/23 (9) (PTO)

10.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat Grey Sandtex (Ref: 4.3.5.6) as per QSI 005 4.3

07-04-26 (9)

11.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

07/04/30 (9X)

12.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location:

FP 18

07-04-30 (9)

13.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

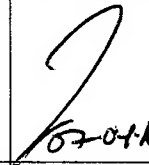
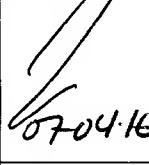
07/05/01

Job Completion

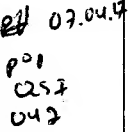
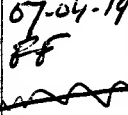
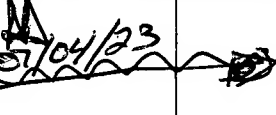

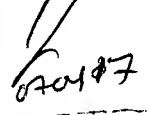


07-05-01

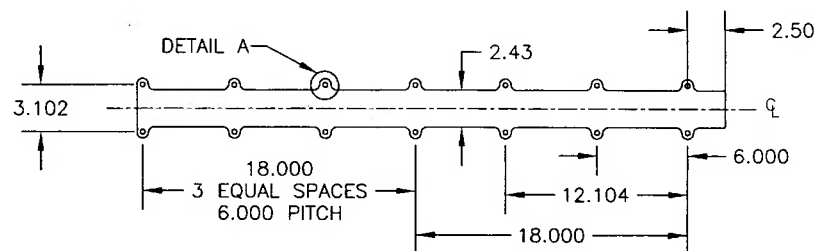
Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	
070416	9.0	<del>Took one</del> Engineering took one for fit & function test for P00082	PH	070416	1	 070416	 070416	

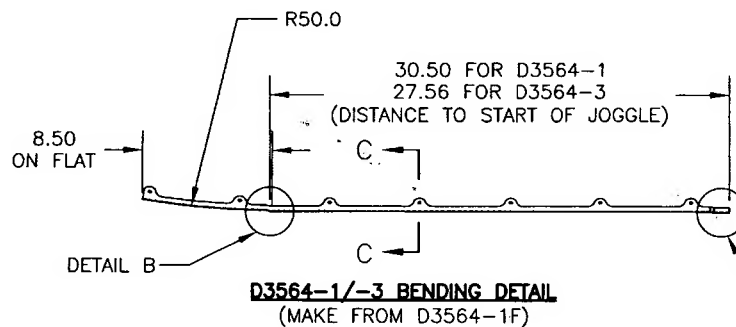
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA: ☒ Date: 07/05/01  
QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
07-04-17	9	TABS WILL NOT FIT SKIDGUY	 07-04-17 P01 Q57 042	OPEN TABS, REMOVE 0.060" MATERIAL SEE ATTACHED	 07-04-19 PF	 07/04/23		 070417

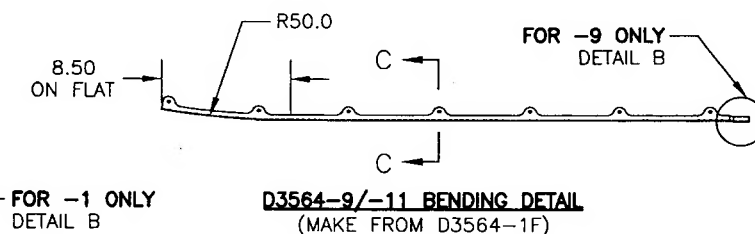
NOTE: Date & initial all entries



**D3564-1F FLAT PATTERN**



**D3564-1/-3 BENDING DETAIL**  
(MAKE FROM D3564-1F)



**D3564-9/-11 BENDING DETAIL**  
(MAKE FROM D3564-1F)

2059B HARDCOAT WELD  
4.0 LONG  
0.063 TO 0.125 HIGH  
(TYP. 11 PLS.)  
WELD AFTER BENDING AS  
ILLUSTRATED PER DT8308



**D3564-1/-3/-9/-11 WELDING DETAIL**

NO. 31417  
WORK ORDER  
SUBJECT TO AMENDMENT  
UNCONTROLLED COPY  
ENGINEERING  
RETURN TO  
SHOP COPY

RELEASED

07-07-28

**D3564-1/-3/-5/-7/-9/-11/-13 WEARPLATE NOTES**

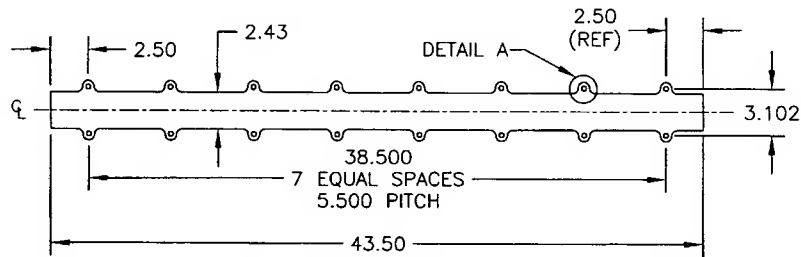
- 1) MATERIAL: AISI 304/316 SS SHEET, 16 GAUGE (0.063 THICK)  
(REF DART MATERIAL SPEC M304S16GA)
- 2) FINISH: POWDER COAT GREY SANDTEX (REF 4.3.5.6) PER DART QSI 005 4.3
- 3) WELD PER DART QSI 004
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 7) PART IS SYMMETRICAL ABOUT CENTERLINE

A		06.12.18	NEW ISSUE
DESIGN	PH	DRAWN BY	PH
CHECKED	PH	APPROVED	PH
DATE		06.12.18	
DRAWING NO.		D3564	
TITLE		WEARSHOE	
SCALE		1:8	

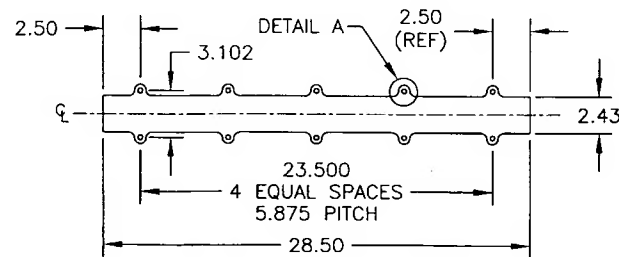
**DART** DART AEROSPACE LTD.  
MARKHAM, ONTARIO, CANADA

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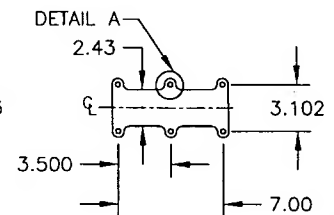
REV. A  
SHEET 1 OF 2



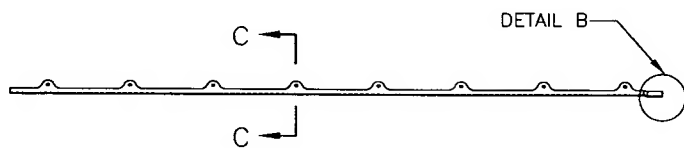
**D3564-5F FLAT PATTERN**



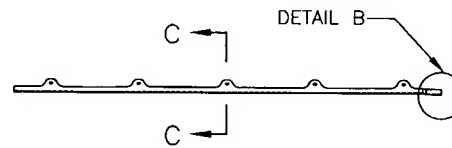
**D3564-7F FLAT PATTERN**



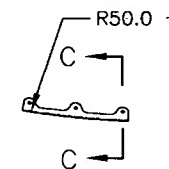
**D3564-13F FLAT PATTERN**



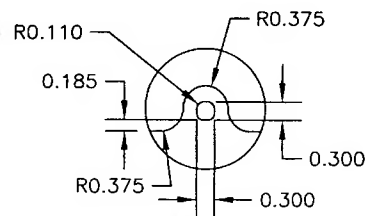
**D3564-5 BENDING DETAIL**  
(MAKE D3564-5 FROM D3564-5F)



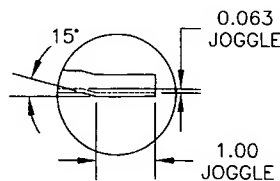
**D3564-7 BENDING DETAIL**  
(MAKE D3564-7 FROM D3564-7F)



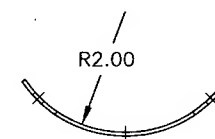
**D3564-13 BENDING DETAIL**  
(MAKE D3564-13 FROM D3564-13F)



**DETAIL A**  
SCALE 1:2



**DETAIL B**  
SCALE 1:2



**SECTION C-C**  
SCALE 1:2

RELEASED  
07 02 28

NO. 31417  
WORK ORDER  
WITHOUT NOTICE  
UNCONTROLLED COPY  
ENGINEERING  
RETURN TO  
SHOP COPY

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DESIGN RH	DRAWN BY RH	<b>DART</b>	DART AEROSPACE LTD. HAWKESBURY, ONTARIO, CANADA
CHECKED #	APPROVED #	DRAWING NO. D3564	REV. A SHEET 2 OF 2
DATE 06.12.18	TITLE WEARSHOE	SCALE 1:8	

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b> 31417
<b>Description:</b> Wear Pad		<b>Part Number:</b> D35641
<b>Inspection Dwg:</b> D35641 <b>Rev:</b> A		<b>Page 1 of 1</b>

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
A 3.102	+/- 0.010	3.101	✓		Vern	
B 6.000(P.T.H.)	+/- 0.010	5.999	✓		Vern	
C 18.000	+/- 0.010	18.000	✓		Vern	
D 12.104	+/- 0.010	12.100	✓		Vern	
E 6.000	+/- 0.010	5.998	✓		Vern	
F 2.50	+/- 0.030	2.50	✓		Vern	
G 2.43	+/- 0.030	2.43	✓		Vern	
H 0.300	+/- 0.010	0.301	✓		Vern	
I 0.300	+/- 0.010	0.300	✓		Vern	
J 0.063	+/- 0.010	0.058	✓		Vern	
K						
L						
M						
N						
O						
P						
Q						
R						
S						
T						
U						
V						
W						
X						
Y						

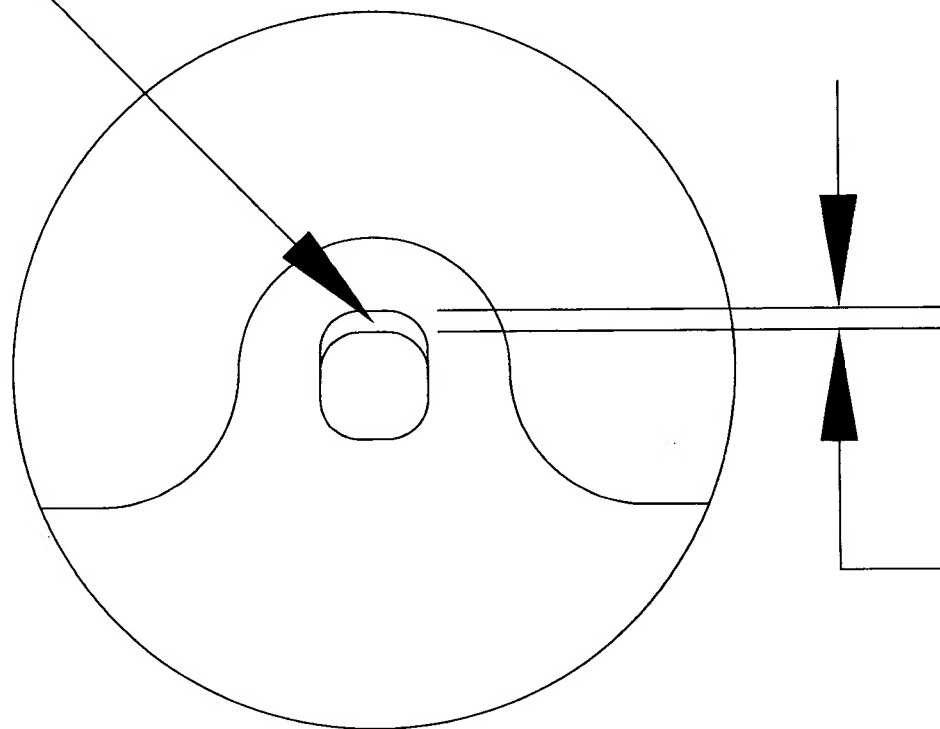
<b>Measured by:</b> SAD	<b>Audited by:</b> [Signature]	<b>Prototype Approval:</b> N/A
<b>Date:</b> 07/03/24	<b>Date:</b> 07/03/24	<b>Date:</b> N/A

Rev	Date	Change	Revised by	Approved
		New Issue	KJ/RF	





REMOVE  
MATERIAL



0.060

**Peter Hum**

**From:** David Shepherd [dshepherd@dartaero.com]  
**Sent:** April 12, 2007 4:55 PM  
**To:** 'Peter Hum'  
**Cc:** 'Chris Provencal'; 'Jason Murdoch'; 'L Lacelle'; 'S Shahbazian'; 'Bill Beckett'; 'Jean-Luc Menard'; 'Eric Charbonneau'  
**Subject:** RE: stainless steel wearplate with gasket tab widening

This is an acceptable deviation to me.

However, the parts have to be cleaned up considerably from what I saw in the pictures (deburred and paint touched up).

It is my understanding that these tubes are going to a high profile customer (Air Log).  
 It can't be done half-assed or look like it was made to fit, in my opinion.

I can't understand why we are just finding out now that the flat pattern is 0.100" to 0.120" too narrow the day before we want to ship the parts. It seems to me this could have been tried with one small prototype piece on a couple sets of holes before we programmed and cut multiple parts on the waterjet. When I sign the drawings, I am assuming all of this stuff has been worked out. I would guess that the programmers are making the same assumption.

We have done a lot of conversions to stainless steel wearplates on other STC's (350, 412 float, 135). Have we done fitups for all of these parts to ensure that they will fit properly with the gasket?

Thanks,  
 David

---

**From:** Peter Hum [mailto:phum@dartaero.com]  
**Sent:** Thursday, April 12, 2007 2:30 PM  
**To:** 'David Shepherd'  
**Cc:** 'Chris Provencal'; 'Jason Murdoch'; 'L Lacelle'  
**Subject:** stainless steel wearplate with gasket tab widening

David,

T 0412-742 PH 07.04.17

We are trying to ship a 206L/407 float skidtube with stainless steel wearplates and the rubber gasket. Upon assembly we have found that the extra thickness the gasket gives, causes a difficult fit for the wearplate.

Jason opened the holes on the tab and the bolts not fit properly, to join the wearplates to the skidtube (see the attached pictures). We would have to open up all the wearplate tabs.

Is this an acceptable deviation for this shipment?

For future shipments the flat pattern will need to be updated.

Thanks  
 Peter

17/04/2007